

Laucks ⁸¹ years

Testing Laboratories, Inc.

940 South Harney St., Seattle, WA 98108 (206) 767-5060 FAX 767-5063

Certificate

Chemistry, Microbiology, and Technical Services

CLIENT: Alaskan Copper Works
P.O. Box 3546
Seattle, WA 98124
ATTN: Jim Brown

LABORATORY NO. 14380

DATE: Feb. 14, 1989

PO# M8675

REPORT ON: ACID

SAMPLE

IDENTIFICATION: Submitted 02/02/89 and identified as shown below:

2-1-3600-M8675

TESTS PERFORMED
AND RESULTS:

	<u>Sample</u>
Total Acidity, calculated as % HNO ₃ (methyl orange end point)	2.8
Specific Gravity at 25°C	1.038

parts per million (mg/L)

Chromium	67.
Copper	6.5
Nickel	57.
Zinc	35.

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens
J. M. Owens

JMO:emt



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AKC-0015046

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of Seattle, Incorporated

ESTABLISHED 1896

Technical Services for: Industry, Commerce, Legal Profession & Insurance Industry



1530 FIRST AVENUE SOUTH

SEATTLE, WASHINGTON 98134

Telephone: (206) 622-0680

Report To: Alaskan Copper & Brass Works

Date: 3-8-89

Report On: Acid Tank Sample

Lab No: E 46759 ✓

SUBMITTED:


One (1) acid tank sample "3200".

ID #2-28-3200 - M9043 for % acid, specific gravity and heavy metals - Cr, Ni, Cu, Zn.

ANALYSIS:

<u>Sample (or Element)</u>	<u>Test Result</u>
Chromium, Cr, %	0.10
Nickel, Ni, %	0.70
Copper, Cu, %	0.05
Zinc, Zn, %	0.005
Specific Gravity	1.19
Acid, HNO ₃ , %	18.83

NORTHWEST LABORATORIES


SAM LEBARRON, Director
Analytical Laboratory

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1530 FIRST AVENUE SOUTH

• SEATTLE, WASHINGTON 98134 •

Telephone: (206) 622-0680

Report To: Alaskan Copper Works

Date: February 28, 1989

Report On: Acid Tank Sample

Lab No.: E 46664

P.O. #M-8938

SUBMITTED:

One (1) Acid Tank Sample "3200"
ID - #2-21-3200-M8938

ANALYSIS:

<u>Element</u>	<u>Test Result</u>
Chromium, Cr, %	0.89
Nickel, Ni, %	1.77
Copper, Cu, ppm	480
Zinc, Zn, ppm	16.40

NORTHWEST LABORATORIES

Sam LeBarron
Director, Analytical Laboratory

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1530 FIRST AVENUE SOUTH

SEATTLE, WASHINGTON 98134

Telephone: (206) 622-0680

Report To: Alaskan Copper Works

Date: March 1, 1989.

Report On: Acid Tank Sample

Lab No.: E 46693

Attention Jim Brown

PO # M9003 and 9004

SUBMITTED:

two acid tank samples for Chromium, Nickel, Zinc and Copper


Sample #1 ID 2-24-3200 - M - 9003

Sample #2 ID 2-24-3200 - M - 9004

ANALYSIS:

<u>Sample (or Element)</u>	<u>Test Result</u>	<u>Specification</u>
	<u>Sample #1</u>	<u>Sample #2</u>
Copper, Cu, %	0.05	0.04
Nickel, Ni, %	0.59	0.46
Chromium	0.70	0.50
Zinc, Zn, ppm	17	10

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Sam LeBarron
Director, Analytical Laboratory

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1530 FIRST AVENUE SOUTH

• SEATTLE, WASHINGTON 98134 •

Telephone: (206) 622-0680

Report To: Alaskan Copper Works

Date: February 28, 1989

Report On: Acid Tank Sample

Lab No.: E 46664

SUBMITTED:

One (1) Acid Tank Sample "3200"

ID - #2-21-3200-M8938

ANALYSIS:

<u>Element</u>	<u>Test Result</u>
Chromium, Cr, %	0.89
Nickel, Ni, %	1.77
Copper, Cu, ppm	480
Zinc, Zn, ppm	16.40

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A handwritten signature in dark ink, appearing to read "Sam LeBarron", is written over a horizontal line.

Sam LeBarron
Director, Analytical Laboratory

wbm



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Certificate

Chemistry, Microbiology, and Technical Services

CLIENT: Alaskan Copper Works
P.O. Box 3546
Seattle, WA 98124
ATTN: Jim Brown

LABORATORY NO. 14879

DATE: Mar. 14, 1989

PO #M9099

REPORT ON: NITRIC ACID

SAMPLE

IDENTIFICATION: Submitted 3/3/89 and identified as shown:

3-3-3200-M9099

Specific Gravity - Insufficient sample for analysis.

Total Acidity, calculated as

% HNO₃ (methyl orange end point) - 6.2

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens
J. M. Owens

JMO:veg



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AKC-0015051